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ABSTRACT

Intended to provide the Portland Public Schools Curriculum Department documentation of the second-year kindergarten implementation and to provide kindergarten teachers data to support the development of a readiness continuum and placement criteria, this report furnishes a detailed explanation and survey of the Writing to Read program, an instructional system with a language experience approach to developing early writing and reading skills for primary grade children. Following an introduction summarizing the evaluation, the first section describes the Writing to Read system, including the Writing to Read Center, instructional materials, and teacher role. The second section describes the program as implemented in the Portland (Oregon) Public Schools, addressing participating schools and students, as well as instructional and support personnel. The third and largest section provides an evaluation of Writing to Read, and includes a study sample, a teacher survey, observations of the Writing to Read centers, student observations, student interviews, language arts learning outcomes, principal topic interviews, summary of key findings, conclusions, and recommendations. Three extensive appendixes provide supplementary data about the programs, including a summary of principals' responses. (NKA)

1984-85 Evaluation Report

WRITING TO READ

IN THE PORTLAND PUBLIC SCHOOLS

by Carolyn Moilanen

Research and Evaluation Dept.
Portland Public Schools
Portland, Oregon
Walter E. Hathaway, Director

December 1986

ADMINISTRATIVE SUMMARY

The purposes of the 1984-85 evaluation of Writing to Read were: 1) to provide the Curriculum Department documentation of the second-year kindergarten implementation, including information on student performance outcomes in language arts learning; and 2) to provide kindergarten teachers data to support the development of a readiness continuum and behavioral criteria to guide appropriate student placement in the system.

IMPLEMENTATION

- In terms of implementation, 22 of 23 kindergarten classes studied implemented the Writing to Read according to the Vital Practices recommended by the program developer.
- Implementation of Writing to Read was labor-intensive. In addition to a full-time Computer Lab Aide and the regular classroom teacher, 22 of the 23 observed Centers were staffed by two other adult supervisors who also worked directly with children at the Center stations.

STUDENT OUTCOMES

- In terms of student outcomes, Writing to Read contributed primarily to the development of early writing. It was demonstrated that many kindergarten students can learn to write words, phrases and sentences.
- Some, but not all, students could read what the and others had written, and it is reasonable to assume that the development of these students' early reading skills may be enhanced. After five months in Writing to Read, the kindergarten sample as a group would not be placed in an accelerated level of the District reading series, but would be placed in "Getting Ready to Read," the program for developing pre-reading skills.

READINESS

- The same writing and reading outcomes cannot be expected for students identified at different levels of readiness. Screening procedures are needed for participation in the system.

While many of the kindergarten participants learned to write as a result of their experience in Writing to Read, there is no evidence that the system is either inferior or superior to other attempts with similar resources to teach writing and reading in kindergarten.

Evaluation Report on

WRITING TO READ

December, 1986

Department of Research and Evaluation
Portland Public Schools
Portland, Oregon

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INTRODUCTION

The Portland Public Schools conducted a formative evaluation of Writing to Read in 1983-84, documenting the pilot implementation, teacher/principal perceptions of the system, and its benefits for primary language arts learning. The Evaluation Report concluded that Portland teachers supported the developmental system implementation and that principals provided satisfactory administrative support. Both teachers and principals reported that Writing to Read contributed to early student writing (composition); however, its effects for reading were seldom noted. Readiness for participation in the system, especially at kindergarten, was a concern.

These conclusions led to two related recommendations:

1. That the place of Writing to Read in the language arts program, its contribution to reading and writing (composition) be determined, and,

2. That criteria be established for determination of pupil readiness to participate in the system.

During the 1984-85 school year, the district conducted a second evaluation of Writing to Read in order to address these key issues. The 1984-85 evaluation focused on Writing to Read in 23 kindergarten classrooms where teachers were implementing the system for a second year. The purposes of this evaluation were: 1) to provide the Curriculum Department documentation of the second-year kindergarten implementation, including information on student performance outcomes in language arts learning; and 2) to provide kindergarten teachers data to support the development of a readiness continuum and behavioral criteria to guide appropriate student placement in the system.

DESCRIPTION OF THE WRITING TO READ SYSTEM

Writing to Read is a kindergarten to first grade supplementary language arts system which provides a structure for the development of a language experience approach to early writing (composition) and reading. The theoretical basis of the system assumes that the activity of writing -- that is, composing -- best precedes reading. Because children come to school with informational and experiential knowledge as well as a wide range of fluency in spoken language, the next most direct step, according to the Writing to Read philosophy, is toward print. Since most young children can encode messages verbally, writing is an extension of their already-developing communication skills.

The curriculum content of Writing to Read is 42 phonemes which can be combined visually, orally and graphically to produce words. According to the developer, the phonemic system is simpler and less inhibiting than the requirements of standard spelling for children's early writing. The curricular emphasis is upon the development of the sound-symbol relationship via the 42 phonemes in order that primary students may acquire skills to write what they say, and read what they write. Writing to Read provides computer drill and practice instruction in the 42 phonemes, a set of 10 student workbooks in which students practice writing single and combined phonemes previously introduced by the computer, and teacher-selected or designed language development activities which include the use of typewriters, a listening library, phonemic games, and other optional related language arts activities.

The Writing to Read Center

The developers recommend that Writing to Read operate in a language laboratory, or Writing to Read Center, separate from the regular classroom, and that classroom teachers bring their regular classes to the center for one hour each day. The Writing to Read Center is equipped with a variety of instructional equipment and materials organized in learning stations through which children move (in pairs) as they learn the "alphabetic principle" which allows them to combine letters of the alphabet to make words.

Instructional Equipment and Materials

Each Writing to Read lab is equipped with three IBM PCjr Personal Computers, six IBM selectric typewriters, and six cassette recorders for Work Journal and taped listening activities. There are four kinds of instructional materials provided by the Writing to Read system: computer software, Work Journals and accompanying tapes, a listening library, and two games.

Computer Software

The computer software provides instruction in encoding and decoding 42 phonemes through ten cycles. Each instructional cycle contains drills on three words, a Mastery Test, and a Make Words exercise which allows students to practice combining phonemes to create new words. As students proceed through each cycle, their correct responses appear on the screen. If students answer incorrectly, or take too long to type the response, the computer waits and then repeats the command. Only in the Make Words section of the software will a cue appear when students have either responded incorrectly or not at all. Table 1 presents the Writing to Read phonemes and cycle words.

Table 1

Writing to Read's 42 Phonemes and Cycle Words

CYCLE NUMBER	CYCLE WORDS	PHONEMES INTRODUCED
1	cat, dog, fish	a, c, d, f, g, i, o, t, sh
2	pig, sun, bed	b, e, n, p, s, u
3	rabbit, leg, three	l, r, th, ē
4	man, snake, vase	k, m, v, ā
5	jump, hand, wagon	h, j, w
6	yard, moon, kite	y, ī, ar, oo
7	zipper, straw, smoke	z, ō, aw, er
8	turtle, chair, house	ou, ur, air, ch
9	oil, horse, wheel	wh, oi, or
10	uniform, book, butter	ū

Other software which accompanies the Writing to Read system includes Silly Sentences, in which words learned in cycles are presented in a sentence as opposed to single-word format. The sentences are humorous, and they provide models of grammatical sentence structure with appropriate capitalization and punctuation. Within each Silly Sentence students can find cycle words they have already learned. It is recommended that Silly Sentences software be interspersed throughout the cycle presentations and followed by sentence writing in the student Work Journals. Two computer games, "Cat and Mouse" and "Rabbit and Turtle" are provided to encourage speedy and accurate phonemic responses to entertaining and colorful visual/aural stimuli. Both Silly Sentences and the two computer games are designed to be used repeatedly according to teacher judgement of student need.

Work Journal

Work Journals are essentially workbooks in which students are provided reinforcement opportunities by combining phonemes to produce words which have been introduced previously in the computer software instructional cycles. The back cover of the Work Journal presents a schematic which allows for a record of student movement and participation in the stations of the Writing to Read lab. Students are encouraged to learn to maintain these records themselves as they move through the system.

Listening

A library of 15 taped literature selections with corresponding sets of student books is provided so that students may listen and follow along at a designated listening station.

Make Words

A set of phonemic cards is provided for students to use in a Make Words game. Phonemes are also printed on a set of larger game cards so that students can play Bingo with phonemes.

Table 2 displays the Writing to Read Stations, their purpose, and related student activities. The Teacher Manual recommends that students use the Computer, Work Journal and Typewriter daily, and that they write (or compose) every day.

Table 2
Writing to Read Stations

STATION	INSTRUCTIONAL PURPOSE	STUDENT ACTIVITY
Computer	Drill and practice in 42 phonemes.	View, listen, repeat, type phonemes, and cycle words.
Work Journal	Written reinforcement of phonemes and cycle words.	Copy phonemes, words previously introduced with computer.
Writing/Typing	Practice in writing phonemes, letters, words; composing phrases, sentences, stories.	Writing or typing; copying, free composition.
Listening Library	Match written and spoken words; experience children's literature.	Listening to story tapes and following in book.
Make Words	Reinforcement of phonemes; of sound/symbol relationship; practice in combining letters to make words.	Listen to sound and select matching phoneme; combine phonemes to make words.
Optional: Language, Games, Puzzles, Arts, Quiet, etc.	Support for development of "alphabetic principle," i.e., practice of combining phonemes to write words.	Determined by teacher according to student needs.

The Teacher's Manual recommends that kindergarten students enter Writing to Read six to nine weeks after completion of classroom readiness activities, and that first graders begin earlier (depending upon their level of language development and knowledge of the alphabet). There are no guidelines explaining how many weeks or months children are expected to work in the total Writing to Read system.

The Teacher Role in Writing to Read

The Writing to Read teacher is an educational manager, writing coach, and learning facilitator. In addition, the teacher plans and conducts a readiness/orientation program, designs or selects curricular materials and activities for Typing, Composing, Make Words, and any optional stations he or she chooses to include. Because Writing to Read is supplementary, the teacher also fits the system to the total language arts program. The Teacher's Manual describes Writing to Read as a structure which teachers can use to guide their selection or development of student activities and materials; Writing to Read allows (or requires) a teacher to build her/his own program according to the language experience theory which underlies the system.

The Teacher's Manual recommends that teachers include ten "Vital Practices" for program success. The Vital Practices can be categorized as follows:

DAILY PREPARATION

1. Prepare individual student Assignment Sheets.
   - o Include assignments to Computer, Work Journal, Typing.
   - o Make daily writing assignments.
   - o Assign to listening as time permits.
2. Review Assignment Sheets before students enter the Center.

ON-GOING MANAGEMENT/TRAINING

1. Establish management plan aimed at student self-direction.
2. Train students in proper use of equipment.
3. Train students to keep Work Journals with them in Center.
   - o Train students to track progress on back cover of Journal.
4. Facilitate working in pairs.
5. Assist students to follow in text at Listening.

WEEKLY/ON-GOING RECORD-KEEPING

1. Record individual student cycle placement and writing stage weekly.
2. Maintain student writing folders.
3. Upon Work Journal completion:
   - o Review Journal.
   - o Write comments in Journal.
   - o Have student take Journal home.

Three modes of managing movement through the stations are outlined in the Teacher's Manual. Each requires a different amount of structure: 1) Group Management includes predetermined station assignments through which students rotate every 15 minutes; 2) Teacher-Directed Management assigns students to Computer, Work Journal and Writing/Typing, and then allows them free choice among stations; and 3) Free Management assigns only the first station and students raise hands to signal their movement to stations of their choice. As students become familiar with participation in the system, they are encouraged to become more self-directed.

WRITING TO READ IN PORTLAND PUBLIC SCHOOLS, 1984-1985

Participating Schools and Students

Fourteen Portland Public Schools, including 33 first grade classes, 34 full-day kindergartens, 10 half-day kindergartens, and two K/1 splits participated in Writing to read during the 1984-85 school year. A total of 1,799 students participated in the system; 60% were kindergarten students and 40% were first graders. A complete list of participating schools, grade levels, numbers of students, beginning dates and months in the system is in Appendix A.

Writing to Read Instructional and Support Personnel

There are four levels of instructional support for Writing to Read in the Portland Public Schools:

1. The District Coordinator assists schools to set up Writing to Read Centers, helps plan for parent orientations, and facilitates ongoing responsive support to all personnel involved in Writing to Read. During 1984-85, the District Coordinator made regular monthly visitations to each Writing to Read Center to provide assistance to teachers with planning, materials preparation, instructional modeling techniques, and/or team-teaching.

2. Principals assigned additional coordinator responsibilities to building support personnel. Building coordinator responsibilities included general monitoring and ongoing support to participating teachers. Coordinators conducted Writing to Read staff meetings and acted as liaison with the District Coordinator for curricular/ instructional and equipment concerns.

3. Participating teachers received Writing to Read inservice training. Experienced Writing to Read teachers (one kindergarten teacher and one first grade teacher from each participating school) attended a four-hour training workshop in the fall. Teachers new to the system (along with their classroom aides) participated in a 12-hour training session which included a presentation of the Writing to Read philosophy and hands-on orientation to the Center stations.

4. All Writing to Read Centers but one were staffed with a computer lab aide whose responsibilities were to supervise the Computer station, appropriately set up software for student use, monitor and assist student participation and performance in the software cycles, and maintain the Writing to Read Center overall. Computer lab aides attended a four-hour computer-awareness workshop in the fall.

Revisions in Teacher Manual

A revised Writing to Read Teacher Manual was expected to arrive before the second-year implementation but it was not delivered to the Portland Public Schools until the end of the 1984-85 school year. Therefore, the 1984-85 implementation of Writing to Read was generally in accordance with the previous year's draft manual. It is the position of the Research and Evaluation staff (who worked on the evaluation of Writing to Read during its pilot year) that the second-year implementation was not materially affected by these events, but it is responsible to note specific changes in the revised manual to which district teachers may or may not have had access:

1. The revised Teacher's Manual recommends a six to nine week readiness/orientation to Writing to Read for kindergarten students. See Chapter 3, pp. 3-1 to 3-26. At the end of the pilot year in Portland, the Curriculum Department independently recommended that kindergarten students start Writing to Read later in the year in order to allow for increased maturity at entrance to the system. See Appendix A for related information.

2. The revised Teacher Manual recommended that the Typing station and the Composing station be combined into the "Writing/Typing Station." See Chapter 8, pp. 8-1 to 8-29. The two stations, Typing and Composing remained separate in the 1984-85 implementation, and therefore Centers had six regular stations instead of just five.

3. The revised Teacher Manual renamed the Games station to the "Make Words" station and suggested that teachers design or select self-instructional manipulative materials for use at that station. (See Chapter 10, pp. 10-1 to 10-13.) In the 1984-85 implementation, the original Make Words game and Bingo cards were still present along with dittoed practice sheets to reinforce letters and sound symbols of cycle words.

EVALUATION OF WRITING TO READ

The Portland Public School's second-year evaluation of Writing to Read continued to be formative in nature. This seemed a responsible approach given the multiple interrelated components of the system and the diversity in implementation. Writing to Read is a classic "innovation bundle" of curricular/instructional strategies including: introduction of reading and writing at the kindergarten level; an unconventional writing-to-read curricular sequence; establishment of a language learning center separate from the regular classroom; student use of typewriters for composition; computer-supported instruction; self-managed student free-flow among five or more learning stations; paired learning. Singly and all together, these elements are innovations which can affect the traditional teaching role, impact the teacher's use of the system, and in turn, affect not only what children learn, but how children learn in Writing to Read.

The evaluation focused upon kindergarten. It was designed to document the kindergarten Writing to Read implementation in terms of the vital practices recommended by the developer, to describe the place of Writing to Read within the total language arts program, and to collect data which will be useful to support the determination of criterion-readiness behaviors required for participation in Writing to Read. The evaluation was based on the following questions:

1. What is the place of Writing to Read in the kindergarten language arts program?

2. What is the system's contribution to reading, and what is its contribution to writing (composition)?

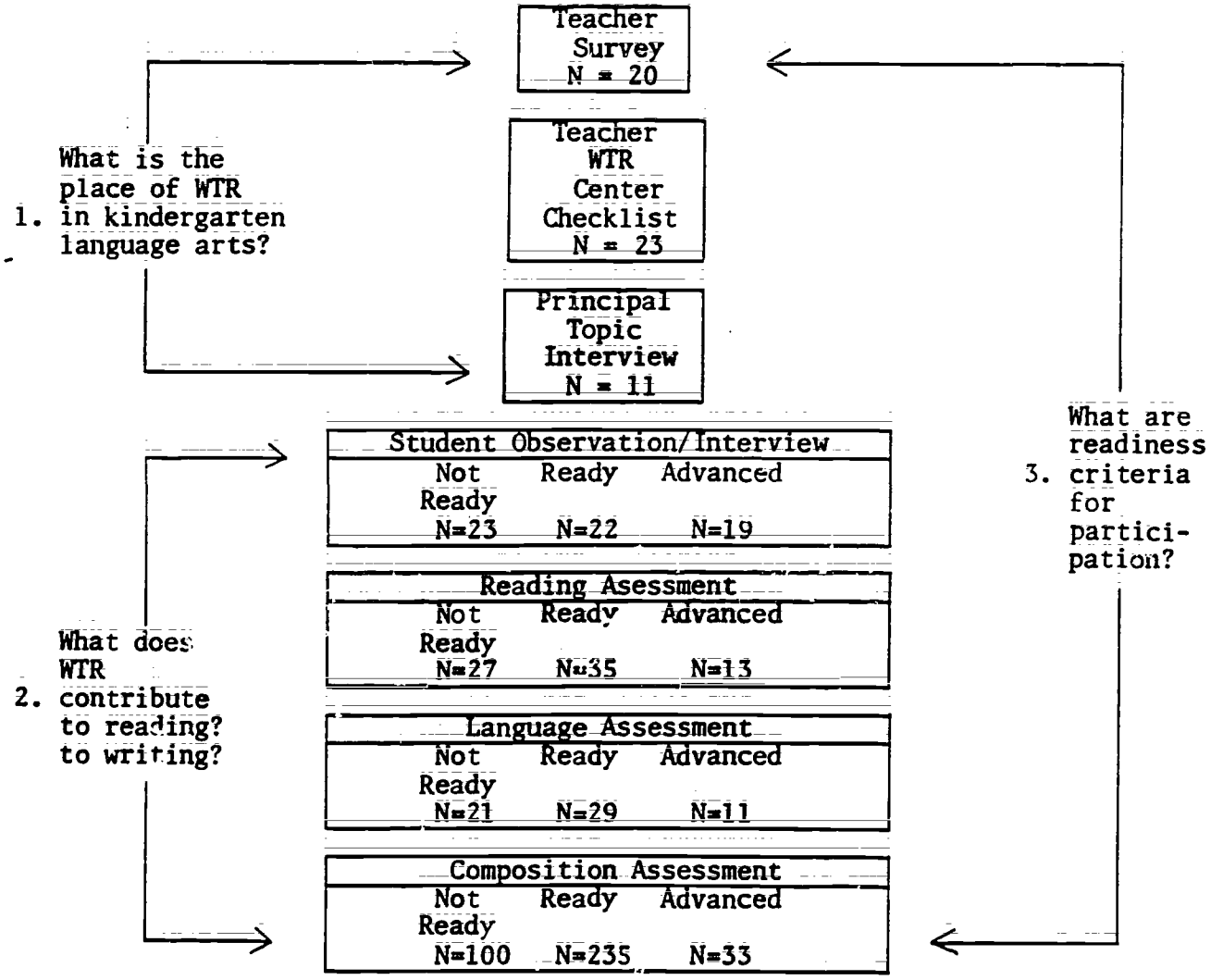
3. What behavioral criteria are useful in determining readiness for, and appropriate placement in, the Writing to Read system?

The Research and Evaluation and Curriculum Departments designed four evaluation instruments for data collection: 1) Writing to Read Teacher Survey, 2) Writing to Read Observation Checklist, 3) Student Observation/Interview

Record, and 4) Principal's Topic Interview. A copy of each of the instruments is in Appendix B. In addition, in order to collect data regarding student language arts learning outcomes the Curriculum Department recommended the use of individual reading and oral language assessments related to the adopted reading series. Curriculum and Research and Evaluation staff cooperatively designed a holistic rating system for scoring compositions. The relationship between the data collection instruments and procedures and the evaluation questions is illustrated in Figure 1.

Figure 1

Diagram of Relationship Between Data Collection Instruments/Procedures and Evaluation Questions



Study Sample for the 1984-85 Writing to Read Evaluation

During 1984-85, the 25 Portland kindergarten teachers who implemented Writing to Read for a second year were invited to participate in the evaluation because of their experience with the system, because Writing to Read was an integral part of their language arts programs, and because Writing to Read Centers were in place in their respective schools. Twenty teachers agreed to participate and they and their kindergarten students (N=564) comprised the study sample for the 1984-85 evaluation. (Three teachers were on leave and two teachers did not respond.) Seventeen of the participating teachers taught full-day kindergarten and three taught two half-day sessions each. Therefore a total of 23 classes (approximately one-half of the District's kindergarten implementation) were included in the study. These classes represented Writing to Read Centers in 11 of the 14 Portland Public Schools implementing the system. Five half-day kindergarten programs in the District were using Writing to Read and three of these programs were in the study sample.

The evaluation design allowed for collection and analysis of process and product data with respect to both the system and the student. Teachers provided written descriptions of their Writing to Read practices, the place of Writing to Read in their total language arts program, and outlined their expectations for student learning outcomes. On-site observations were conducted in Writing to Read Centers to document their system implementations.

Teachers identified each of their students in terms of categories of readiness for participation in Writing to Read. Teachers were asked to submit composition samples for all their students; 368 individual student papers were collected and included in the composition assessment.

A stratified random sample was selected in order to observe students at different readiness levels as they worked in Writing to Read. In each classroom, one to three students were identified in each readiness category; 64 of these students were observed and interviewed in the Writing to Read Center, 79 students were included in a Reading assessment, and 65 were included in an Oral Language assessment.

Principals in the 11 participating schools were interviewed regarding how Writing to Read fits in with other school instructional programs, what influence it has on school management and budget priorities, and their impressions of the implementation upon teachers.

All of the data were collected near the end of the 1984-85 school year. Teachers were surveyed during April, and Center/student observation, interviews and language assessments were conducted during May and June.

Writing to Read Teacher Survey

The Writing to Read Teacher Survey was administered to the 20 participating kindergarten teachers by staff of the Department of Research and Evaluation in two after-school meetings during April, 1985. Surveys were mailed to teachers unable to attend the sessions; an accompanying memorandum outlined instructions for responding. A copy of the Writing to Read Teacher Survey is in Appendix B.

Teachers were asked to explain:

- How Writing to Read fits with their regular language arts program.
- Any readiness criteria they applied for student participation in the system.
- What learning outcomes were expected for each readiness category defined.

Teachers were also asked to identify each of their students at entry to Writing to Read according to the teacher's perception of the student's readiness for participation in the system.

Writing to Read and the Kindergarten Language Arts Program

Responses to survey items were open-ended, and teachers gave more than one answer to each item. Table 3 presents a summary of teacher explanations of how Writing to Read fits the regular language arts program.

Table 3

Summary of Teacher Responses:
How Writing to Read Fits the Regular Instructional Program

TEACHER RESPONSE	NUMBER OF TEACHERS RESPONDING (N=20)
Supports development of sound/symbol relationships	14
Provides motivation for reading, writing	11
Helps students write sentences, stories	10
Contributes to oral language development	3
Helps children learn to write, spell words	3
Reinforces independence, self-management skills	2
Helps improve listening skills	2
Contributes to fine-motor development	2
Provides good introduction to computer	1
Helps children learn to match upper/lower-case letters	1
WTR reinforces me and my regular language arts program	1
WTR is supplementary to my language arts program which includes various other District-adopted programs	4
WTR drives my language arts program	4*
We have developed our own separate readiness version of Writing to Read	1

* One respondent was a half-time kindergarten teacher.

All 20 teachers responded that Writing to Read supports the regular language arts program in some way. Fourteen teachers (70%) reported that the system contributes to the development of sound-symbol relationships, 11 "teachers (55%) wrote that Writing to Read is motivational for language arts learning, and 10 teachers (50%) noted its contribution to the development of primary children's composition. Teachers included explanations of specific Center activities to support their responses.

Though Writing to Read is a supplement, three kindergarten teachers pointed out that the system has changed their traditional language arts instructional emphasis:

- "The Writing to Read has 'coerced' me into having somewhat higher expectations for my kindergarten class. It adds a dimension - carrying them farther than I would have formerly expected. It fits my curriculum because we do work on sounds and put concerted effort into developing oral, expressive language skills."

- "For most children, the Writing to Read program has served as a major part of my language arts program. In-class work in reading, writing and alphabet lessons have served to more or less reinforce the work in the lab."

- "My kindergarten program is two half-day sessions. Out of that two hours and fifteen minutes, we spend one hour in the Writing to Read lab daily. Therefore, due to time limits, the Writing to Read program is my main language arts program for most of the year."

Kindergarten Readiness for Participation in Writing to Read

The 20 classroom teachers provided summary written descriptions of the primary characteristics of the three readiness categories of **Not Ready**, **Ready**, and **Advanced** students at their entry to Writing to Read. Teachers were directed to omit descriptions of categories for which they had no representative students. For example, if teachers believed that all of their students were ready for Writing to Read, they did not provide a description of characteristics for other categories. Teachers coded each class member according to his or her readiness category. All 20 teachers listed characteristics of **Not Ready** and **Ready** students. Fifteen teachers listed characteristics of **Advanced** students. Of the 564 students included in the study sample, 190 students (34%) were identified as **Not Ready**, 330 students (59%) were identified as **Ready**, and 44 (8%) were identified as **Advanced**. Table 4 summarizes teacher descriptions of readiness characteristics for participation in Writing to Read.

Table 4

Summary of
Teacher-Reported Characteristics of Kindergarten Students in Various Readiness Categories

NOT READY	NUMBER OF TEACHERS RESPONDING (N=20)	READY	NUMBER OF TEACHERS RESPONDING (N=20)	ADVANCED	NUMBER OF TEACHERS RESPONDING (N=20)
Poor motor/pencil control	17	Know letter names and sounds; have notion of sound/symbol relationship	15	Can read, write, sound out words	13
Low attention span/cannot remain on task/cannot concentrate, cannot work independently	13	Know upper/lower case letters	7	Know sounds and can form words	13
Do not know, cannot recognize letters of alphabet	11	Can write letters	6	Independent worker; can remain on task	4
Cannot associate upper/lower-case letters	6	Can work independently	6	Long attention span	2
Unable to follow directions/ poor listening skills	6	Can follow directions	5	Can write (compose)	2
Cannot sit still	5	Good fine-motor skills; can use pencil	5	Know where letters are on keyboard	1
No concept of sound/symbol relationship	3	Can remain on task	4	Bored by regular kindergarten program	1
No interest in reading/ writing	3	Have skills for small-group work	4	Tell stories in sentences	1
Poor oral language development	3	Concentration, good attention span	3	Are eager	1
No small-group/partnering skills	2	Fluent oral speech	2	Came to school reading	1
		Can sit still	2		
		Good listening skills	1		
		Can read words	2		
		Take pride in work; interested, enthusiastic	1		
		Interested in reading, writing	1		

In describing students at three levels of readiness for participation in Writing to Read, teachers responsed in terms of sensory/cognitive/study skills and motivation:

1. Knowledge of Letters/Ability to Write Letters, e.g., ability to recognize and name letters of alphabet; associate upper and lowercase letters; ability to control pencil for writing.

2. Student Self-Management Skills, e.g., ability to remain on task, concentrate, maintain attention span, work independently/in small group/with partners, follow directions, listen, sit still.

3. Motivation, e.g., interest in reading, writing.

Knowledge of (and ability to write) letters accounted for 63% of teacher-reported readiness characteristics; student management skills acounted for 33% and motivation for 4%.

Table 5 displays expected learning outcomes for each readiness group.

Table 5

Summary of Primary Learning Outcomes Teachers Expect From Student Participation in the Writing to Read System

TEACHER RESPONSE	NUMBER OF TEACHERS RESPONDING (N=20)
FOR NOT-READY STUDENTS	
An increase in some notion of the sound/symbol relationship	13
Ability to recognize and write letters, own name, stories	9
Can recognize letters in both upper/lower-case	5
Will finish between 2 and 4 cycles, Work Journals	5
Will increase attention span	2
Will be able to complete Work Journal without help	2
Will enjoy writing/reading experiences	2
Will be able to complete an instructional cycle in 15 minutes	1
Can dictate and copy sentences	1
Can read beginning words	1
FOR READY STUDENTS	
Can write sentences	17
Will know sound/symbol relationships and alphabet	14
Will enjoy, have confidence, and write by choice	4
Will read own writing and cycle words	4
Will know upper/lower-case form of letters	3
Can complete Work Journal on own	2
Can spell words	2
Will complete from 7 to 10 cycles and Work Journals	2
Will independently move from station to station	2
Will be able to remain on task	1
Will be able to control pencil	1
Will complete at least 5 cycles and Work Journals	1
FOR ADVANCED STUDENTS	
Will write	18
Will complete all 10 cycles	6
Will read their writing and beginning readers	5
Will stay on task	3
Will learn to punctuate their writing	2
Will complete all Work Journals	2
Will improve their reading ability	1
Will have a feeling of superiority	1
Will be able to print letters correctly	1
Will learn conventional spelling	1
Will know their sounds	1

Ninety percent of expected learning was directly related to knowledge of letters and ability to write letters. Teachers expected that participation in Writing to Read would help students at all levels of readiness to develop phonics skills, to learn to write, to begin reading, and to successfully complete some or all of the Writing to Read computer cycles and related Work Journals.

Not Ready students were expected to improve their understanding of the sound-symbol relationship, to recognize and be able to write letters, their names, and stories, and to complete between two and four instructional cycles and Work Journals. **Ready** students were expected to improve their understanding of the sound-symbol relationship; to be able to compose sentences; to enjoy reading and writing; and to complete five or more instructional cycles and Work Journals. **Advanced** students were expected to be able to compose; to read not only their own writing but also beginning readers, and to complete all ten computer cycles and Work Journals. Six percent of responses expected improved Self-Management skills and 5% of the responses identified motivational outcomes.

Observations in Writing to Read Centers

The Department of Research and Evaluation staff scheduled visitations with all 20 kindergarten teachers in order to observe their Writing to Read Centers in operation, and to observe and interview students at each readiness level. Approximately one hour was spent in each of the 20 Writing to Read Centers; 23 kindergarten classes were observed.

The description of the Writing to Read Centers in operation was based primarily on observational data collected during the first 15 minutes of each Center visitation and recorded on the Writing to Read Observation Checklist (see Appendix B for a copy). Data recorded later during student observation/interviews were used to verify and/or amplify the summary description. For example, if no one was observed at a particular station during the 15-minute Center observation, but students were observed there later, the original description was corrected.

Description of the Writing to Read Center in Operation

The observed Writing to Read Centers were colorful and well-decorated. Materials were typically prearranged at stations for student use and student workspace was adequate. Learning stations, if not labelled, were coded by symbols or colors, or were by their very nature identifiable. (Students who were interviewed were always able to identify specific stations in the Writing to Read Centers.) During one of the visitations, one computer was out for repair. In all other instances all equipment appeared to be operating satisfactorily. The one Center which lacked this general overall appearance had no computer lab aide; varied daily scheduling did not permit optimal development of the Center setting.

The Writing to Read Stations. During visitations, all Writing to Read stations were being used in 12 of the 23 classes visited. Make Words was not used in seven classes; two classes had no Composing station; and in two other classes, students did not visit Listening. In ten classes, students were observed working at Optional Stations included for supplementary language development: seven Centers had Quiet Reading Corners; the Blackboard was used to practice forming letters in five Centers; four Centers used other computers and/or other than cycle software. For some students the other computer-assisted instruction replaced the Writing to Read material and for others it was supplementary. In the one Center without an aide, only the Computer and Work Journal station were operating. The majority of the class remained in their regular room while writing, with the teacher rotating back and forth between the classroom and the Writing to Read Center.

Writing to Read Center Management. During visitations, students were typically assigned to groups for their first station activity in the Center. Thereafter, three kinds of management were observed: Group, Teacher-Directed, and Free. Seven classes utilized Group Management (i.e., predetermined student movement, stations during the entire lab period) and seven used Teacher-Directed Management in which students were directed by teachers (or aides) to stations after having their required activities checked off on the back cover of their Work Journals. In the remaining nine classes, students

initiated their own movement somewhat more freely after the first station assignment. In this system of Free Management, instead of directing their movement, teachers, aides or other staff in the lab would follow up and reinforce the student's continuing activity.

Vital Practices. The categories of Vital Practices (Daily Preparation Management, and Record-keeping) were not always directly observed during the initial 15 minute Center observation, but student observations as well as student responses to interview questions provided an indirect means of collecting information on the practices. For example, one quesion asked children "How do you know where to go next in the Writing to Read Center?" Children typically responded in terms of the management system used by their respective classroom teachers, and sometimes they included an explanation of their individual/ paired or group activities which were displayed on charts. Record-keeping was observed to occur on the back of Work Journals. When records were made, a supervisor made them; in no instance were students observed recording their own progress.

Writing to Read Center Supervision. During visitations, the Computer Lab Aide usually monitored students at the Computer and students at nearby stations. In 14 of the classes observed, teachers rotated among the Writing to Read stations all during the period. In the one class without a Computer Lab Aide, the teacher moved between her classroom and the Writing to Read Center all during the period. In nine of the observed classes, teachers remained at one station; (four remained at Composing, two remained at the Work Journal, one moved between Composing and Work Journal). During observations in these nine classes students rotated through the teacher's station, or at some point came to the teacher for individual conferencing and directions. The teacher's decision to rotate or to remain in a central stationary position did not appear to be related to the number of supervisory staff present in the Center. Two of the nine classes were staffed by a teacher and a computer lab aide, three had a teacher, Computer Lab Aide plus two additional helpers, and four classes had one additional staff member in addition to the teacher and Computer Lab Aide.

All but three Centers were staffed with support personnel in addition to classroom teachers and Computer Lab Aides. Instructional aides, building coordinators, or community volunteers were working in the Centers during observations and teachers reported that their participation was regular. The staff-student ratio ranged from 1:7 to 1:21. Ten classes observed had a student-staff ratio of about 1:7, ten had a ratio of 1:9, two had a ratio of 1:12. In the Center without a Computer Lab Aide, the ratio was 1:21.

Student Observations

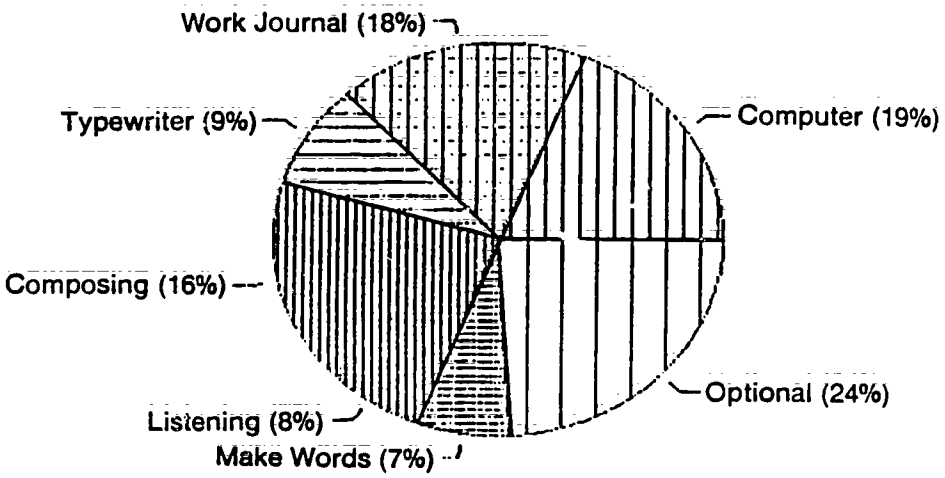
In addition to defining readiness levels and expected learning outcomes, kindergarten teachers identified each class member according to his or her level of readiness for participation in the Writing to Read system. Prior to classroom visitations, names of students from each readiness category were written on the Student Observation Interview Record. At the beginning of each classroom observation, teachers or aides were asked to identify the named students and their current cycle level was entered on the observation record. The first students present in each readiness category were observed during a 15-minute period and interviewed for five minutes each. A total of 64 students were observed and interviewed: 23 **Not Ready**, 22 **Ready** and 19 **Advanced**.

The purpose of the student observation/interview was to document **Not Ready**, **Ready**, and **Advanced** student activities and their participation in Writing to Read and to ascertain student perceptions of their Center learning experiences. Observations and interviews were conducted by two evaluation specialists with background and experience in early childhood education. Both staff members had participated in the District's pilot evaluation of Writing to Read.

"Vital practices" recommended for Writing to Read include daily student use of the Computer, Work Journal, Typing, and Composing. When a summary of the student observation/interview sub-sample participation was made, Computer, Work Journal, Optional and Composing stations were the stations most frequently used by all participating students. Typing, Listening and Make Words were least-often used. Figure 2 displays percentages of stations' use by observed students during center visitations.

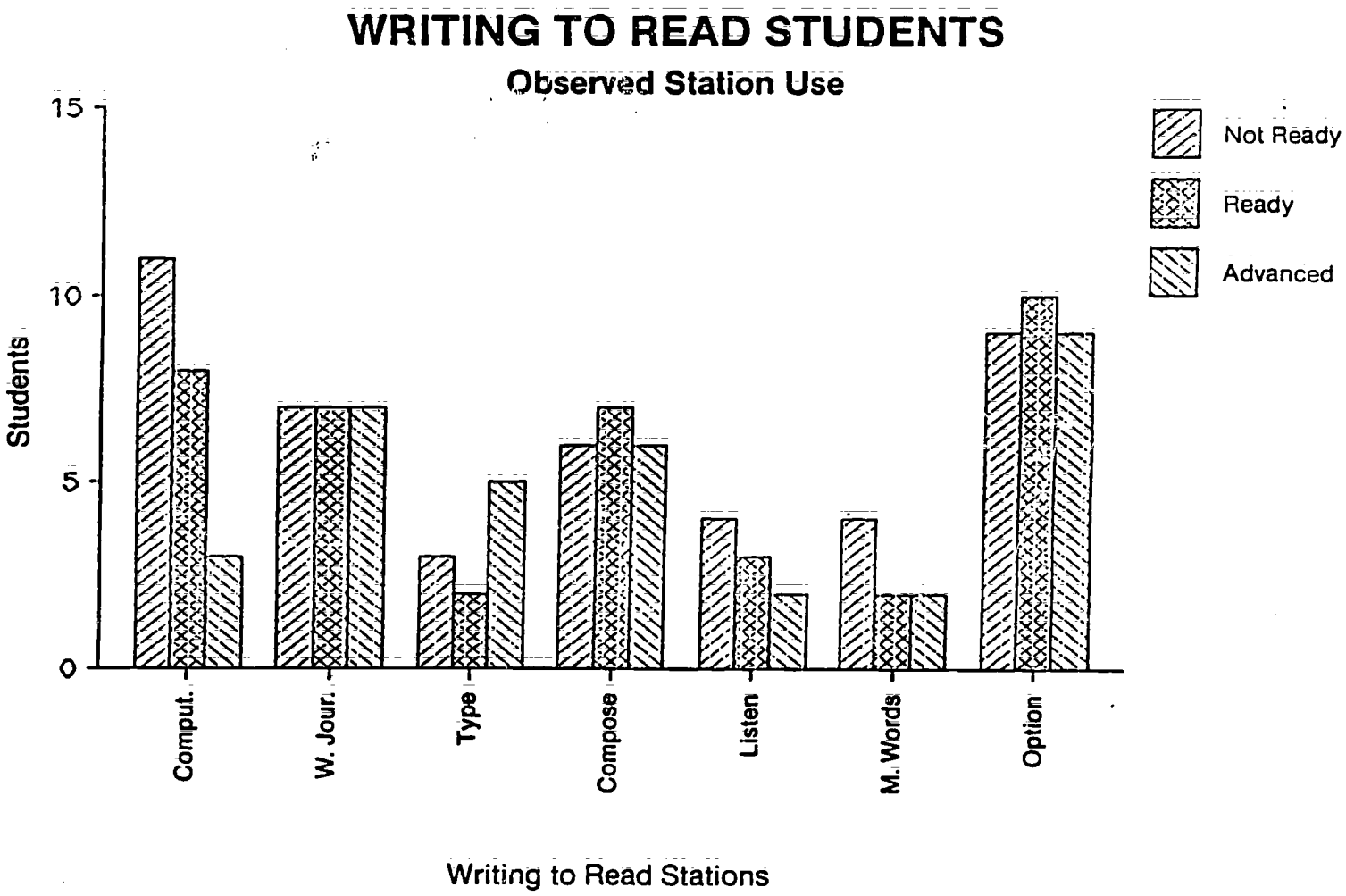
Figure 2

PERCENTAGES OF STATIONS' USE DURING OBSERVATIONS



Regardless of the Writing to Read Center Management system employed in the Center, the observer's impression was that overall student participation was on task at the Writing to Read stations. The numbers of stations attended varied by readiness groups; Ready and Advanced students tended to work at only one or two stations during the fifteen-minute observations, while Not Ready students ranged between one and four moves. Figure 3 presents observed station use by readiness group.

Figure 3



At the Computer, observed students were working in the instructional cycles or on mastery tests. Students observed at Work Journal were completing Journal pages. At Composing, students were typically writing sentences and stories. Ten students were observed at the Typewriter station; they were all copying cycle words and sentences except one Advanced student who was observed typing a copy of his own handwritten story. At the Optional language development stations, students at all readiness levels were occupied with stage-appropriate activities such as cutting/pasting/coloring, completing phonics dittoes, practicing writing letters or using other than system software, e.g., "Alphabet Zoo."

Over all the classroom visitations, 11 of 23 of the Not Ready students observed were assisted at some point by an adult lab supervisor; six of 22 Ready students were assisted; six of 19 Advanced students were assisted. Table 6 shows that supervisors provided most one-to-one or small-group assistance at Composing, Work Journal and Optional language development stations; little or none was observed at Typewriter, Listening, and Make Words.

Table 6
Summary of
One-to-One/Small-Group Assistance
Provided Students During
all Fifteen-Minute Observations

	STUDENTS AT WRITING TO READ LAB STATIONS						
SUPERVISOR	Computer	Work Journal	Type-writer	Composing	Listening	Make Words	Optional
Teacher	- -	2N	- -	2N,1R,1A	- -	- -	1N,1R
Computer Lab Aide	2N	- -	- -	- -	- -	- -	- -
Classroom Aide	1N	1N, 3A		1N,1R,1A	- -	1N	3R,1A,
Total Students:	3	6	- -	7	- -	1	6

N = Not Ready student
R = Ready student
A = Advanced student

Student Interviews

Evaluation staff interviewed the 64 students they had observed at work in the Writing to Read Centers. The purpose of the interview was to gather children's perceptions of their overall Writing to Read learning experience and to collect information about children's writing and their ability to read their own writing as well as cycle related mastery-words presented in the Writing to Read software.

A structured Student Interview Record of nine questions was used with each student. Responses were summarized for the three readiness categories and for the whole group. A copy of the Student Observation/Interview Record is in Appendix B.

How Students Described Writing to Read

Thirty-seven students (15 **Not Ready**, 12 **Ready**, 10 **Advanced**) described Writing to Read by naming the Center stations. Twenty-two other students (5 **Not Ready**, 10 **Ready**, 7 **Advanced**) described Writing to Read in terms of writing, learning and spelling words, coloring, reading. Miscellaneous responses were given by five students. Sample responses to the question "What do you do in the Writing to Read Center?" include these:

Not Ready Student Responses

"I type dog. I type cat. I draw a picture."

"I write and color and stuff."

"We write at the Journals and we practice the letters on there and I type. And we hear some stories and read some stories, quiet reading; we play games and we write."

Ready Student Responses

"Write the word what the man says--the one on the tape. Go to 'puters' and learned words."

"Writing words is kind of like tracing words; we trace the words in the books (Work Journals) and I'm on book 5 and tomorrow I'll be on book 6 because the test is tomorrow."

"I write and work in my books, color and make pictures, and type on computer. I write stories about the story pictures like airplanes..."

Advanced Student Responses

"I write the pictures going with the stories so people can know what the story's about. I also type the story when I write."

"You listen on earphones, you do stuff on Work Journals and go on Computers. The earphones go with the Work Journals. . .there's all these different words that you try. We do the words. They make you say the sounds and then you write the words. Computer, you do sort of like the same things as the Work Journals."

What Students Liked Most About Writing to Read

Students responded in terms of specific stations and activities. The Computer, Work Journal and Optional stations were what students liked most about Writing to Read. Table 7 presents responses by readiness group.

Table 7

What Students Liked Most About Writing to Read

Station	Students by Readiness Categories			
	Not Ready	Ready	Advanced	Total
Computer	4	3	7	14
Work Journal	1	7	4	12
Typewriter	3	4	1	8
Composing	1	1	1	3
Listening	5	2	1	8
Make Words	--	--	--	--
Optional	4	4	4	12
All the stations	2	--	--	2
No response	3	1	1	5
Total	23	22	19	64

The Computer. While Computer was the favorite Center station, reasons for liking to work at the Computer differed by readiness categories: two **Not Ready** students said they liked to spell and learn cycle words and one **Not Ready** student liked the Computer Lab Aide. Two **Ready** students liked passing the test. Responses of **Advanced** students were more varied: one student liked the computer best because it helped him pass to the next Work Journal, one liked it because it helped him spell words, another because he liked to "type stuff," and two students said they just liked computers.

Students who didn't like the Computer said they couldn't pass the mastery test and had to repeat the cycles, or that the Computer cycle activity was too long.

Sample responses to "How do you like using the Computer?" included the following:

Not Ready Student Responses

"Fine. I like it a little because the clapping part and the stomping part. Clapping goes first, then stomping. I don't like to say the sounds."

"She pushes this big one and the picture comes on and we do all of it; then we type on it."

Ready Student Responses

"Fine. A lot. I like to write words. I wrote stories and write on the Computer and make up stories."

"I don't know. We get to learn, see pictures, play games when we're done with the books (Work Journals)."

Advanced Student Responses

"What I like about the Computer is I can learn and have a good time and it teaches me how to write words."

"A little. But sometimes I like it a lot when I'm almost out of my Work Journal. We do the Make Words game and the test."

The Work Journal. Thirteen students (one **Not Ready**, seven **Ready**, four **Advanced**) who liked the Work Journal best gave as their reason the opportunity to finish and move to higher-level Journals. Two students (one **Ready**, one **Advanced**) liked the Work Journal because they "love to write." Students referred to their Work Journals as "books" which they used to practice writing their letters and words, and also as a reference for the cycle words which they typically copied when at the Typewriter station.

Typewriter. Students explained that they use the typewriter to copy cycle words, to type their own words and sentences, and sometimes stories. Sample responses to the question "How do you like using the Typewriter?" included the following:

Not Ready Student Responses

"Supposed to type words. We copy them. Then we copy things we read on the book (Journal) and then we get a new book."

"Fine. A lot. We have to type the word "cat." Sometimes I think of the words, and sometimes I copy them."

Ready Student Responses

"Well, I like using the typewriter because (the teacher) asks us to type the words that you're on; we look on our book (Journal) you can copy what's in there and you can change it to a different one."

"It's fun; you can write whatever you want. If you're on (Journal) five, you write "hand, wagon, jump" in a row and then write a sentence about them."

Advanced Student Responses

"A lot, because you get to write by yourself. You copy things and then when you're done, you write it yourself."

"I like using the Typewriter because it has little keys. It has little keys and sometimes I can't find them but it doesn't matter. I type stories, words that I write; mostly I type on my own."

Optional Stations. Students gave no reason for liking the Optional stations beyond naming and/or describing specific station activities such as coloring or drawing pictures, playing Concentration-like matching games, or engaging in stage-appropriate activities such as cutting and pasting.

Student Writing. When they were asked, "Are you learning to write? Can you show me something you've written?" Fifty-nine of 64 students said they could write (two **Ready** students did not respond and three **Not Ready** students said they didn't know how to write).

Student writing folders were maintained for individual students or whole classes in either the Writing to Read Center or the regular classroom. Interviewers asked if and where writing samples were maintained and arranged to borrow papers from classroom files to have them available during student interviews. Forty-six students had writing to show the interviewer; 18 **Not Ready**, 15 **Ready**, and 13 **Advanced**.

Table 8 displays the kind of writing shared by students in each readiness group.

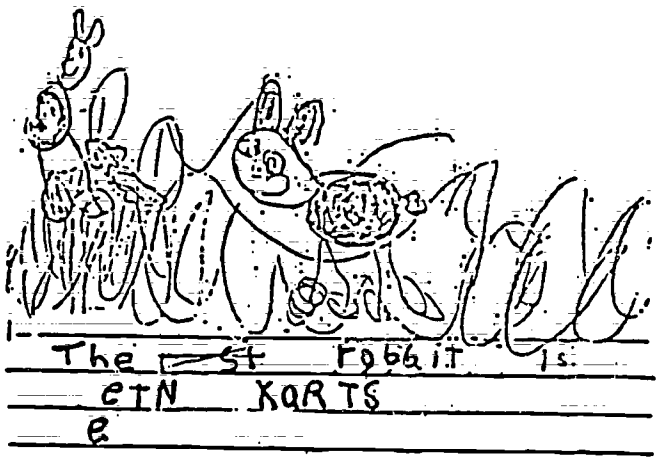
Table 8
Samples of Student Writing

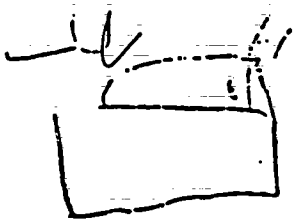
Description	Students by Readiness			Total
	Not Ready	Ready	Advanced	
Drawings; name, isolated letters	4	--	1	5
Cycle Words	8	1	3	12
Phrases of two or more words; simple sentences	6	14	9	29
No writing available	5	7	6	18
Total	23	22	19	64

Overall, 63% of the shared papers were representative of Stage 2 writing; 37% were representative of Stage 1 writing. When the data are examined in terms of readiness categories, 93% of the Ready, 70% Advanced, and 33% of Not Ready writing was classified as at Stage 2.

Tables 9, 10, and 11 display examples of the writing that students shared.

Table 9
Not Ready Student Writing





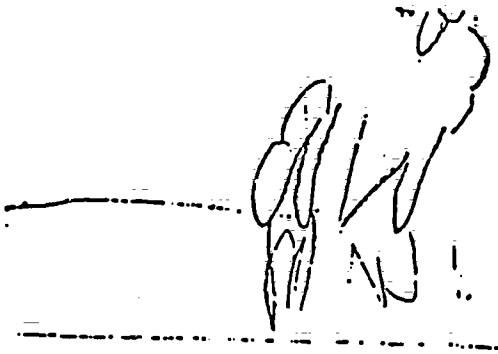
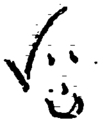


Table 10

Ready Student Writing



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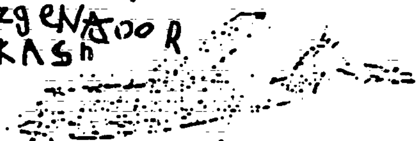

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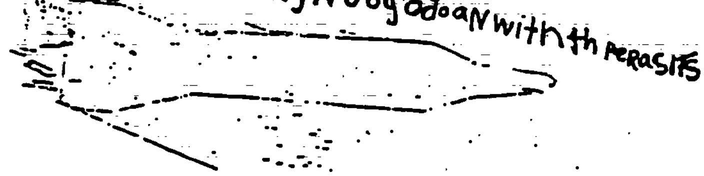
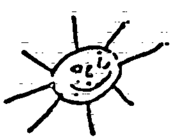
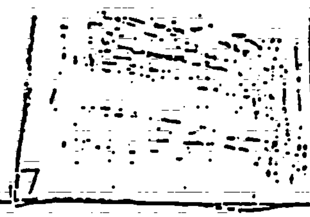




this Grl is 5 this Grl is Prdd My Fred is 7

Love



I Luv Grandma beKuz

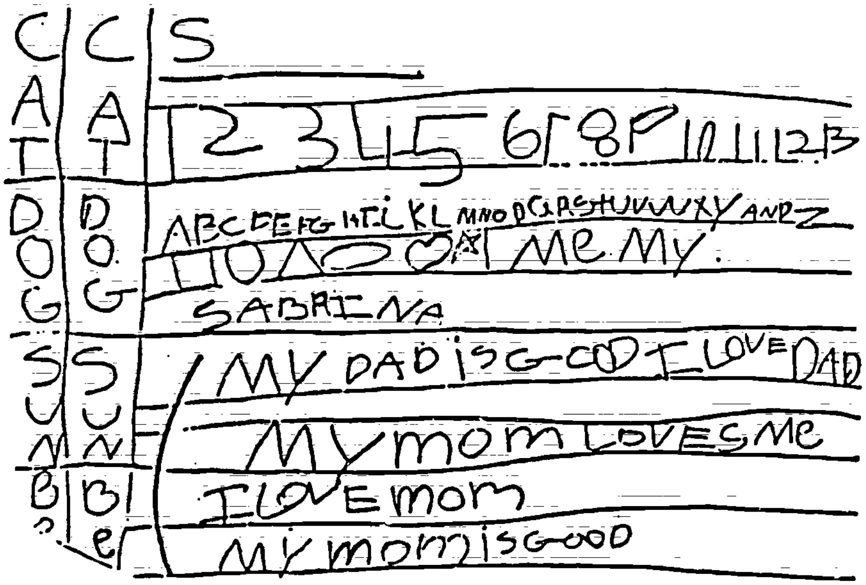
she took me to the

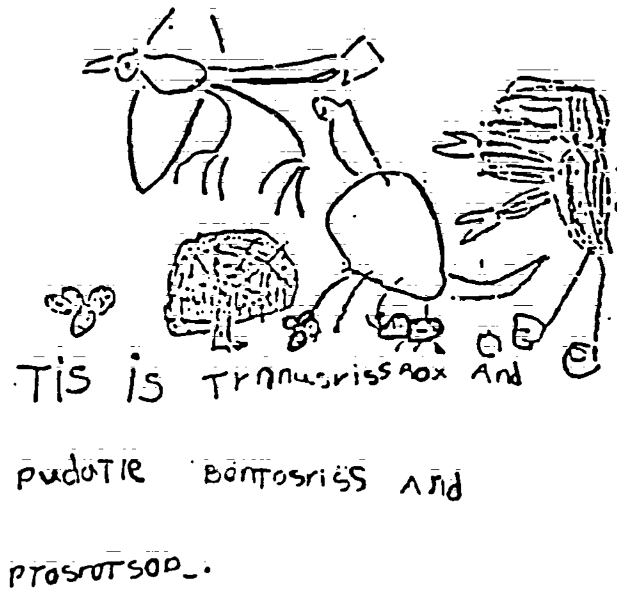
stor for iscrem

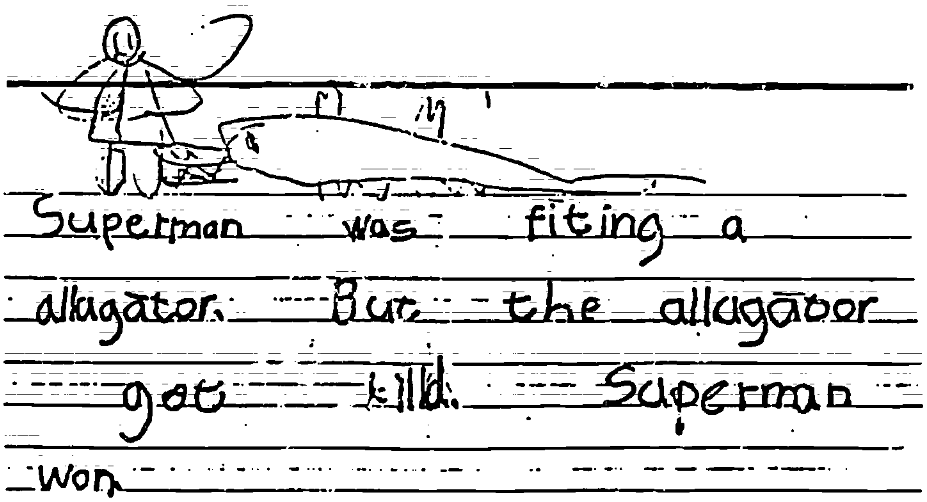
41

Table 11

Advanced Student Writing







I wont to be in the olepinkys.
I wont to get frist plose
than I hav two trofes.

42

Language Arts Learning Outcomes

According to the Writing to Read Teacher's Manual, participation in the system will help children "learn how to write what they can say (and) they also learn to read their own writing" (p. 6-1). More specific writing and reading outcomes are not specified for either kindergarten or first grade groups, or in terms of the length of time children participate in the system.

One of the evaluation questions for this study addressed the contribution of Writing to Read to writing and reading outcomes. Therefore, part of the data collection was planned to assess both writing (composition) and reading for the kindergarten student sample. In addition, an informal oral language inventory was administered. Table 12 displays the sample from whom outcome data were collected during the 1984-85 Writing to Read evaluation.

Table 12
Distribution of Kindergarten Student Sample
for Reading, Writing, Oral Language Assessments

Nature of Assessment	Kindergarten Student Sample			Total
	Not Ready	Ready	Advanced	
READING				
Students Read Own Writing*	18	15	13	46
Students Read Cycle Mastery Words*	--	--	--	59
Houghton-Mifflin Word Recognition/ Comprehension Subtests	29	37	13	79
ORAL LANGUAGE				
Houghton-Mifflin Oral Language Subtest	23	31	11	65
COMPOSITION				
Student Writing Samples	100	235	33	368

*These students also participated in Center observation/interviews.

Student Reading Assessments

Three levels of student reading were assessed for the purpose of determining what effects Writing to Read has on children's reading. Students were asked to read their own writing because Writing to Read purports to enable children to write what they can say, and read what they write.

Students were asked to read lists of cycle words and to read subtests for placement in the District's reading program. It seemed reasonable to assess the level of children's ability to read the cycle/make-words given their focus within the system's instructional software, and their direct relationship to the Vital Practices recommended by the developer. Approximately half (30 minutes) of Center time each day is devoted to practice of phonemic sounds and cycle words. Fifteen minutes each day is spent in Computer drill and practice, and another 15 minutes is spent writing phonemes and cycle words in the Work Journal. In Writing to Read, students typically enter the Computer software program at Cycle 1 and progress to Cycle 1^ by mastering three words in each cycle lesson. At the end of each cycle, additional make-words are presented in a Mastery Test. Therefore, it is possible to practice and master 30 words in the regular cycles, and 45 additional words at the related make-words stage. Children at all levels of readiness and placement within the instructional cycles were asked to read from lists of cycle and related make-words.

Because Writing to Read supplements the kindergarten language arts program which contains a reading readiness curriculum directly related to the District-adopted reading program, the Informal Reading Inventory was conducted to assess students' expected entry-level placement in the adopted series.

Students Read Their Own Writing

Forty-six of the 64 interviewed students had writing samples and were invited to read from them. Students were classified as "Could Read" if they were able to read any of their own writing--isolated words, phrases or sentences. Students who "Couldn't Read" were unable to read either cycle words or any other words they had written. Table 13 displays student performance.

Table 13
Students Read Own Writing

Reading Behavior	Students by Readiness Categories			Total
	Not Ready	Ready	Advanced	
Student Could Read Own Writing	7	12	10	29
Student Couldn't Read Own Writing	11	3	3	17
Total	18	15	13	46

Students Read Cycle Words

During interviews, children were invited to read as many cycle and related make-words as they could, beginning with cycle 1. Data were collected for 59 students. Figures 4, 5, and 6 display the frequencies of cycle and related make-words read by students at each cycle. The number of words students are expected to read at each cycle is shown by markings on the sloping line.

Figure 4

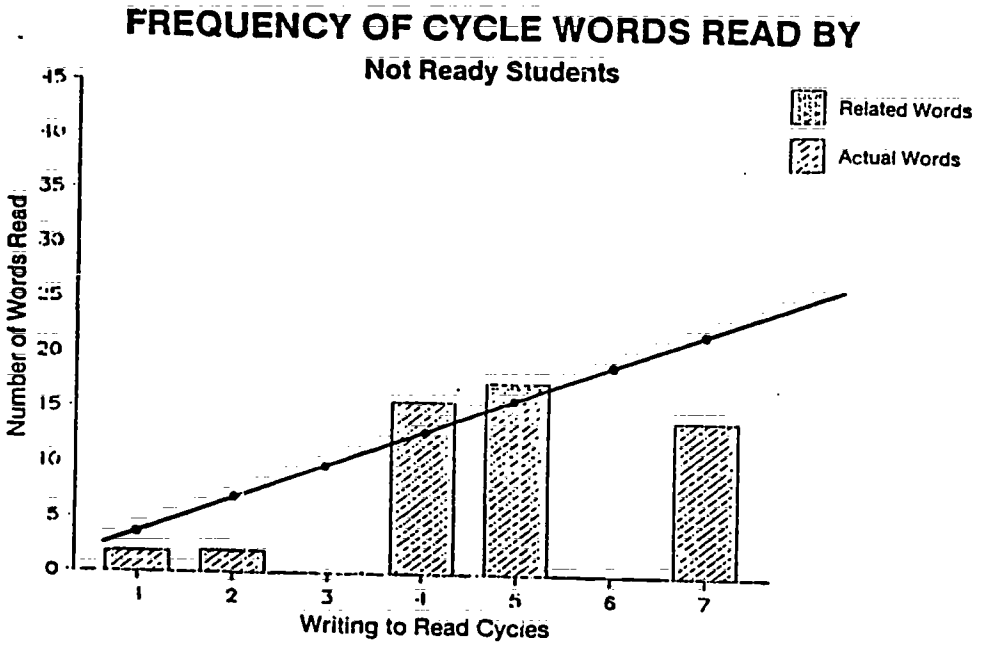


Figure 5

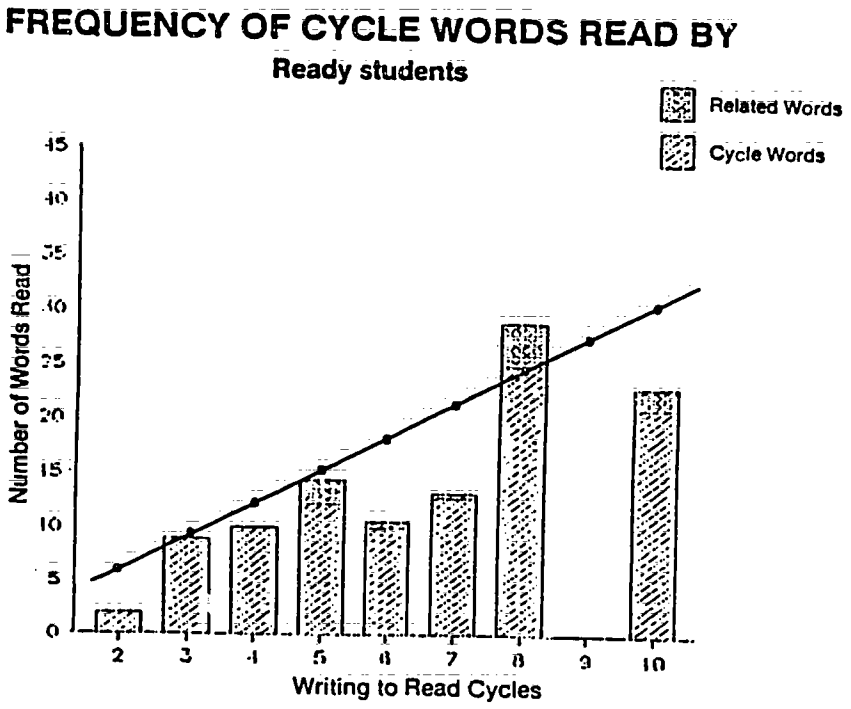
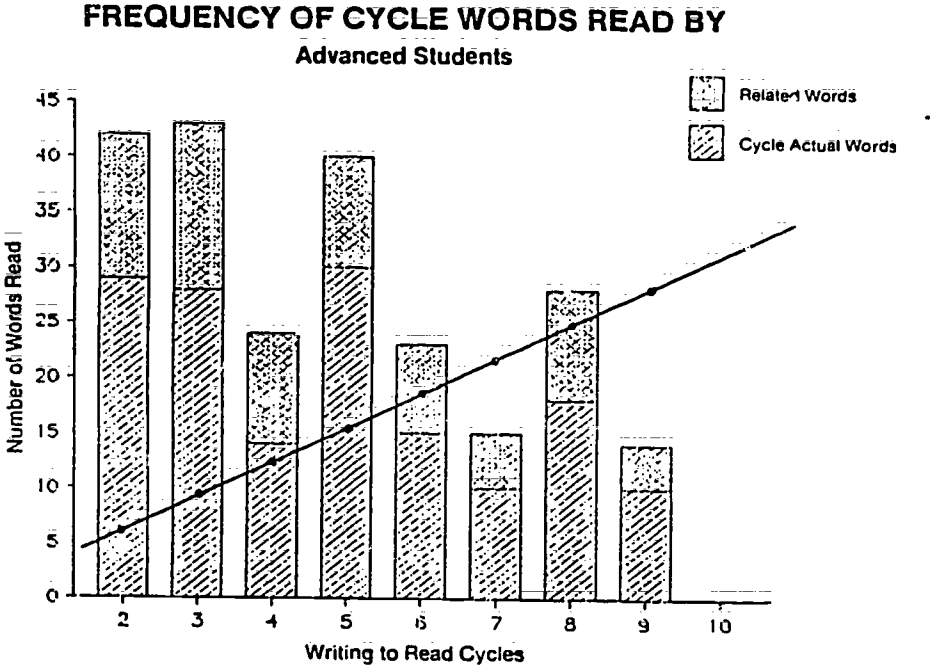


Figure 6



Twenty-five students were (10 Advanced, 6 Ready, 9 Not Ready) able to read words commensurate with and beyond their current cycle placement. Thirty-four students read below the expected frequency for all cycles.

Thirty students (19 Not Ready, 13 Ready, 8 Advanced) were unable to read any of the related make-words.

While students typically read more cycle words when they were in higher levels of the cycle software, the higher cycle placement did not improve their ability to read related make-words. Two Not Ready students (at cycle 5) were each able to read one related make-word; 8 Ready students at cycles 5-10 were able to read one or more make-words. Advanced students' ability to read--both cycle words and make-words--did not appear to be influenced by cycle placement because Advanced students consistently read make-words at and beyond their cycle placement.

Student Placement in Adopted Reading Series. Houghton Mifflin is the District-adopted reading program, and the Curriculum Department wanted to know whether students with the Writing to Read experience could be expected to enter first grade at advanced reading levels. Word Recognition and Comprehension subtests of the Houghton Mifflin Informal Reading Inventory (used to determine placement in the reading series) were used to assess students' expected entry level to the adopted series. Word Recognition scores and Comprehension scores were interpreted separately.

The subtests were administered by three staff members from the Curriculum and Research and Evaluation Departments. Prior to administration, the staff met and reviewed the subtests, agreed to follow the publisher's administration procedures and methods for recording student responses, and coordinated the assessment schedule. A predetermined assessment cut-off time of 15 minutes was agreed upon as reasonable for **Advanced** students. (A summary of assessment procedures is in the Teacher's Manual for the Informal Reading Inventory Levels B-O, Houghton Mifflin Reading Program, 1981.)

The assessment was administered at the end of the school year in May, 1985, to 79 study sample kindergarten students; 29 **Not Ready**, 37 **Ready**, and 13 **Advanced**. Table 14 displays group means for both reading subtests.

Table 14
Group Means for Reading Subtests

	Readiness Categories			
	Not Ready (N=29)	**Ready** (N=37)	**Advanced** (N=13)	Total (N=79)
Word Recognition	1.24	1.97	4.92	2.18
Comprehension	1.20	1.67	4.15	1.91

The mean scores were interpreted as estimates of a groups' entry level to the District's reading series. Table 15 displays the Houghton-Mifflin reading series levels, and entry level estimates for Not Ready, Ready, Advanced groups.

Table 15

Houghton-Mifflin Reading Levels
and Estimates of Readiness Group Entry Placement

	Reading Series Titles	Grade Level	Houghton Mifflin Inventory Subtests	
			Word Recognition	Comprehension
A	Getting Ready to Read: Program for developing essential pre-reading skills	K	Not Ready (1.24)	Not Ready (1.2) Ready (1.67)
B	Bears (Pre-primer)	1	Ready (2.0)	
C	Balloons (Pre-primer)	1		
D	Boats (Pre-primer)	1		Advanced (4.15)
E	Sunshine (Primer)	1	Advanced (4.92)	
F	Moonbeams	1		
G	Skylights	2		
H	Towers	2		

According to results of both Word Recognition and Comprehension subtests, the Not Ready students would be placed in the first level of the series--"Getting Ready to Read," a program designed to develop essential pre-reading skills. Word Recognition scores for Ready students support placement in the first pre-primer, "Bears." Comprehension scores for Ready students support placement in the first level "Getting Ready to Read." Advanced students' performance on the Word Recognition subtest suggests placement in the first grade primer, "Sunshine"; Comprehension performance indicates placement in the highest-level pre-primer, "Boats." The Not Ready and Ready students generally performed three levels lower than the Advanced students.

Overall, whole group performance was better in Word Recognition; and the mean 2.18 score supports placement in the first pre-primer. The whole group Comprehension mean, 1.91, suggests entry to "Getting Ready to Read."

Oral Language Assessment

The Oral Language Development subtest of Houghton-Mifflin's Ready Steps was administered to 65 students. This assessment of expressive language is part of the adopted Houghton-Mifflin reading program. The assessment was administered by staff of the departments of Curriculum and Research and Evaluation. Children were shown a set of sequenced pictures and asked to tell a story about them. Responses were recorded and analyzed according to assessment and scoring procedures provided in Houghton-Mifflin's "Test for Ready Steps." The assessment manual suggests that "kindergarten children average anywhere from 4.2 to 7.0 words per T-unit . . . those five-year-olds who score at or above 5.0 Words/T-unit are typical for their age." According to this interpretation, each group mean met the typical average criteria. Table 16 displays the results.

Table 16
Group Means for Language Subtest

Not Ready (N=23)	Ready (N=31)	Advanced N=11)	Total (N=65)
6.0	5.8	6.0	5.9

Student Composition Assessment

The Curriculum Department requested end-of-the-year writing samples from all kindergarten participants in Writing to Read. A total of 386 papers were received and coded with student identification number, teacher and school name. Papers from 20 of the 23 study sample kindergarten classes were included among the 386 papers, and the study sample class papers were coded by readiness.

Staff of the Curriculum and Research and Evaluation Departments conducted a review of the literature regarding holistic rating of student compositions, and prepared a tentative list of traits common to most rating scales. An examination of the collected writing samples was conducted and traits of quantity (production), quality (use of new words), and mechanics (spacing, direction, punctuation) were selected as criteria for a composite five point

developmental rating scale. Successive points on the scale reflect the cumulative criteria of preceding levels. Table 17 displays the criteria for the Portland Public Schools (PPS) five-point rating scale as judged in reference to the Six Stages of Writing described in the Writing to Read Teacher Manual.

Table 17

PPS Rating Scale and WTR Six Stages of Writing

PPS Rating Scale Criteria	Writing to Read Six Stages of Writing
0. Drawings, no name, letter, words	
1. Drawing, name, isolated letter, cycle word	Stage 1: Cycle Word Writing
2. Phrases of two or more words with phonetic/ invented spellings	Stage 2: New Word Writing
3. Simple sentence	Stage 3: Phrase and Sentence Writing
4. Two or more simple sentences, punctuation	
5. Simple story sequence	Stage 4: Simple Story Writing
	Stage 5: Intermediate Story Writing
	Stage 6: Advanced Story Writing

A holistic rating procedure was designed--not to address each of the criteria separately--but instead to produce a single rating to represent the overall or "whole" impression of the composition. A set of student papers, or range-finders, were selected as representative of each point on the developmental scale. These papers were used to train a team of raters.

Ten District staff members participated in the rating session. Raters included a childhood development specialist, instructional specialists, building Writing to Read coordinators, computer lab aides, the District

Coordinator for Writing to Read and members of the Research and Evaluation Department. The District language arts specialist conducted the rating training session and monitored the assessment process.

During the training process, raters were required to articulate reasons for assigning particular ratings in terms of the developmental scale criteria. When the trainer determined that a reasonable consensus among practice ratings had been achieved, the whole sample was holistically scored. Each paper received two independent ratings; if the ratings differed by more than a single point, the trainer acted as referee and determined the final score. Ten papers required referee process.

Table 18 presents the mean composition ratings for the whole sample, as well as for students identified for readiness.

Table 18
Mean Composition Ratings

Readiness Category	N	Mean Composition Rating
Not Ready	106	1.87
Ready	247	3.68
Advanced	33	5.90
Total	386	3.37

The mean rating of 3.37 indicates that on average, the whole kindergarten group produced compositions which included cycle words, new words (with phonetic or invented spelling), phrases and simple sentences. Their writing corresponds to Writing to Read Stage 3: Phrase and Sentence Writing. The mean rating for the **Ready** students was about this level. The **Not** Ready mean rating of 1.87 indicates that this group's writing consisted of drawings, name, isolated letters and/or cycle words, corresponding to Writing to Read Stage 1: Cycle Word Writing. The **Advanced** mean rating of 5.90 indicates that the group composed simple stories of two or more sentences, with sequence and punctuation, corresponding to Writing to Read Stage 4: Simple Story Writing.

Principal Topic Interviews

Interviews were conducted with the principals of the 11 schools whose kindergarten teachers and classes were the sample for the 1984-85 evaluation of Writing to Read. A list of four topics was presented to each principal for spontaneous comments:

1. How Writing to Read fits in with the other instructional programs.
2. Influence on school management priorities.
3. Impact on school budget.
4. Impact on teacher morale.

All comments were recorded without questioning from the interviewer. Principals were informed that typed copies of their comments would be sent to them for verification and editing as they saw fit. Final copies were produced and are on file. All 11 sets of comments were aggregated for reporting purposes and are in Appendix C.

A principal could make more than one comment about a topic. Altogether, 19 comments were made regarding the fit of Writing to Read with other instructional programs. Twelve indicated that Writing to Read supports, enhances, or extends the regular language arts program, especially for student writing or composition.

Sixteen of 22 comments about Writing to Read and school management priorities noted that Writing to Read does influence building management priorities because it requires time and support of both Computer Lab Aides and building coordinators (as well as participating classroom teachers) to plan, meet and coordinate the implementations; scheduling is complex at the building levels, and coordination Writing to Read and the regular classroom instruction is a high management priority for teachers. Six responses indicated that Writing to Read is no different than other programs in terms of management.

Writing to Read was reported to impact the school and district budget because the implementation requires FTE allocations for building Computer Lab Aides, and for some support for coordination at the building level. Eleven principals reported their need to purchase additional and different computer software, to pay for cards to adapt computers for the printer, and to purchase other educational materials to enhance the system implementations.

Principals perceived that teachers were more positive about the program during the second-year because they could see that children enjoyed the Writing to Read learning experience, because teachers have been able to "add their own touches" to the system, because of the support of the District Coordinator and other Center volunteers, and because classes are spending 45 minutes instead of an hour working in the Center. Four comments noted that the later start for kindergarten students better suited their needs for readiness.

SUMMARY OF KEY FINDINGS

1. During the second-year implementation of Writing to Read, the following Vital Practices were observed in 22 of 23 classes visited to gather information for this report.

- o Individual student assignment to Computer, Work Journal and Composing stations were made on a daily basis.

- o Different Management Systems: In nine Centers students moved freely among stations after their first activity; in seven the classes moved as a group, and in seven other Centers, teachers directed the movement of individual students.

- o Student writing records were maintained in either the Center or the regular classroom.

- o Individual student cycle placement and completion was recorded on the back of the Work Journals.

2. Implementation of Writing to Read was labor-intensive. In addition to a full-time Computer Lab Aide and the regular classroom teacher, 22 of the 23 observed Centers were staffed by two other adult supervisors. During all Center visitations, supervisory personnel were observed to be working directly with children in all readiness groups at the Center stations. In addition to their responsibility for the Vital Practices, 10 of the 20 Writing to Read teachers had developed Optional stations and related materials for use in the Centers.

3. According to the teachers, Writing to Read supports the regular language arts program by: 1) contributing to developing understanding of sound-symbol relationships, 2) motivating children for language arts learning, and 3) contributing to the development of composition skills. Both teachers and principals more often described Writing to Read as a writing program. Students were more often observed to be engaged in writing-related (as opposed

to reading) activities at all Center stations except the Computer and Optional stations where they were engaged in phonics drill and practice or stage-appropriate reading related activities. Students typically described their Center activities in terms of writing. Expected learning outcomes in language arts for all readiness groups were more often achieved in writing than in reading.

4. Teacher-reported readiness characteristics for **Ready** children indicate that they have a preliminary knowledge of the alphabet and the sound-symbol relationship; **Advanced** children typically know their sounds, and have already begun to read and write. Readiness characteristics of Not Ready children indicate that they have neither a preliminary knowledge of the alphabet, nor levels of motor skill development and attention span teachers perceived to be required for successful participation in the Writing the Read system. The teacher-reported criteria that characterized readiness groups were validated by data collected from student observations and interviews, as well as by reading and writing assessments.

5. Kindergarten teachers expected participants in Writing to Read to develop phonics skills, to learn to write and to begin reading. After five months participation in Writing to Read, assessments in reading (N=79) and composition (N=386) were conducted, and a randomly-selected sub-sample of students (N=46) were invited to read their own writing. Results indicate that:

- Students in the kindergarten sample were able to compose phrases and simple sentences.

- Of the 46 students invited to read their own writing, 29 could read words, phrases, or sentences they had written, and 17 students were unable to read any of their own writing.

- In terms of Word-Recognition, the kindergarten sample would be placed in the first pre-primer of the District-adopted reading program. In terms of Comprehension, students would be placed in "Getting Ready to Read," the program for developing pre-reading skills.

When the reading and writing assessment data were disaggregated, outcomes differed for **Not Ready, Ready** and **Advanced** students.

6. During visitations to the Writing to Read Centers, students were observed to be on-task at their station activities. The favorable adult-child ratio contributed to support for individual and small group learning activities and facilitated children's movement among the stations. Children who were interviewed reported that they liked Writing to Read and they were able to explain their learning experiences in Writing to Read in terms of their stations activities. Favorite stations were the Computer, Work Journal and Optional stations. Students often made reference to their current Work Journal level and compared their progress to that of their classmates. Children who shared their writing seemed to be comfortable and eager to review and talk about their written work.

CONCLUSIONS

The 1984-85 evaluation of Writing to Read should be considered a continuation of the 1983-84 effort. To put the study in perspective, Writing to Read was placed in 14 schools as a promising but untried system with a high level of public acceptance because of its computer component. Writing to Read extended the traditional kindergarten curriculum by teaching children to write with the assumption that early writing would enhance and accelerate the development of early reading skills.

Findings of the second-year evaluation tend to show that:

1. Writing to Read contributes primarily to the development of early writing. It was demonstrated that many kindergarten students can learn to write words, phrases and sentences.

2. Some, but not all, students can read what they and others have written, and it is reasonable to assume that the development of these students' early reading skills may be enhanced.

3. After five months in Writing to Read, the kindergarten sample as a group, would not enter the District reading program at an accelerated level, but would be placed in "Getting Ready to Read" which is a program for developing pre-reading skills.

4. The same writing and reading outcomes can not be expected for students identified at different levels of readiness. Screening procedures are needed for participation in the system so that instructional time spent in the Center will contribute optimally to the language arts learning of all students.

5. Implementation of Writing to Read is labor intensive. Preparation and development of support materials and stations extends the teacher's role of instructional manager in a program which is described as supplementary to regular instruction. Supervision and assistance to kindergarten students in their varied station activities typically involved one or two adults in addition to the classroom teacher and the Computer Lab Aide.

There is no defensible evidence that the system is either inferior or superior to other attempts with similar resources to teach writing and reading in kindergarten.

RECOMMENDATIONS

Recommendations to discontinue or expand the Writing to Read system are inappropriate at this time due to a lack of comparative data about its relative efficiency and effectiveness for language arts learning. We do recommend that:

1. Writing to Read be supported in the 14 schools where it has been implemented.

2. Continued development of appropriate instrumentation and methodology for readiness assessment be conducted.

3. Additional appropriate curriculum and learning activities for all stations be developed or that adaptation of whole class participation be considered in order that the time spent in the Center will contribute optimally to language arts learning of students at all levels of readiness.

4. If future evaluations are conducted, comparisons should be made between Writing to Read and two logical alternatives: a) a system in which the computer is used as a word-processor, and b) a program which teaches reading and writing in kindergarten but does not include computer use.

5. Comparative studies include a cost-effectiveness component.

APPENDIX A

Writing to Read in the Portland Public Schools, 1984-85

Table A

Schools Participating in Writing to Read in
Portland Public Schools, 1984-85

SCHOOL	BEGINNING DATE	MONTHS IN SYSTEM	GRADE LEVEL: NUMBER OF STUDENTS
Beach	1-85	5	K/1:34
	1-85	5	K:27
	1-85	5	K:28
	1-85	5	K:29
	1-85	5	K:26
Buckman	9-84	9	1:20
	9-84	9	1:18
	9-84	9	K,AM:20
			K,PM:22
Chapman	10-84	8	K:23
	11-84	7	K:22
	10-84	8	K:22
	1-85	5	1:24
	10-84	8	K:25
Eliot	9-84	9	1:24
	10-84	5	1:10
	1-85	4	1:19
Humboldt	1-84	3	1:24
	11-84	3	1:22
	2-85	4	K:21
	2-85	4	K:22
	10-84	3	1:21
	1-85	4	K:21
Irvington	1-85	5	K:22
	1-85	5	K:25
Kenton	1-85	5	K, AM:25
	1-85	5	K, PM:24
	9-85	8	1:28
King	10-84	8	1:26
	12-84	6	K:27
	1-85	5	1:27
	1-85	5	K:28
	9-84	9	1:21
	1-85	5	K:28
	1-84	8	1:26
	9-84	9	1:14
	1-85	5	K:27
	1-85	5	K:28
	1-85	5	K:18

Table A
(continued)

Schools Participating in Writing to Read in
Portland Public Schools, 1984-85

SCHOOL	BEGINNING DATE	MONTHS IN SYSTEM	GRADE LEVEL: NUMBER OF STUDENTS
Richmond	1-85	5	K:16
	10-84	8	1:27
	10-84	8	1:26
	1-85	5	K, AM:21
	1-85	5	K, PM:20
Sabin	9-84	3	1:24
	1-85	5	K:28
	1-85	5	K:25
	9-84	3	1:23
	1-85	5	K:20
	9-84	3	1:23
	1-85	5	K/1:24
	1-85	5	K:26
	9-84	3	1:24
Sunnyside	10-84	8	1:25
	1-85	5	K, AM:28
	1-85	5	K, PM:22
	10-84	8	1:23
Vernon	1-85	5	K:25
	1-85	5	K:25
	1-85	5	K:22
	10-84	8	1:19
	10-84	8	1:19
	10-84	8	1:19
	1-85	5	K:27
	10-84	8	1:21
	9-84	8	1:18
	1-85	5	K:26
Vestal	10-84	7	1:17
	1-85	5	K, AM:18
			K, PM:15
	11-84	7	1:17
Woodlawn	1-85	5	1:23
	1-85	5	K:22
	1-85	5	K:23
	9-84	3	1:22
	1-85	5	K:21
	1-85	5	K:23
	1-85	5	K:25
	9-84	3	1:11

Time Spent in the Writing to Read System During 1984-85

In the 1983-84 pilot year, 33 (79%) of the 42 participating kindergarten classes began the system in the fall. During 1984-85 only six of the 44 kindergarten classes (14%) began Writing to Read in the fall. The remaining 38 delayed their participation until January, 1985. One of the classes which began in the fall was in fact a locally-designed readiness version of Writing to Read and did not involve students in the computer instructional cycles and Work Journal until January, 1985. The Curriculum Department supported the later start for kindergarten students in order to allow for their increased maturity during the first half of the school year.

The amount of time kindergarten classes spent in the Writing to Read system ranged from three to nine months. Table B displays the implementation by grade level and months in the system during the 1984-85 school year.

Table B

Duration of Participation in Writing to Read, 1984-85

CLASSES	Time in the Writing to Read System							
	3 Mos.	4 Mos.	5 Mos.	6 Mos.	7 Mos.	8 Mos.	9 Mos.	Total
Kindergarten	--	3	35	--	1	[illegible]	[illegible]	44
First Grade	9	1	4	--	2	[illegible]	5	33

For most kindergarten classes, Writing to Read provided a supplementary langage arts program for about half the school year; the duration of first grade participation was more varied.

APPENDIX B:

PORTLAND PUBLIC SCHOOLS DATA COLLECTION INSTRUMENTS

- Writing to Read Teacher Survey
- Writing to Read Observation Checklist
- Student Observation/Interview Record
- Principal's Topic Interview

WRITING TO READ

TEACHER SURVEY

Teacher Name: _____ Date: _____

School: _____

Grade: _____

Time of WTR Lab: _____

1. Please explain how the Writing to Read lab fits your regular instructional program, e.g., in terms of goals, the kindergarten language arts continuum.

A key component of the 1984-85 evaluation of Writing to Read emphasizes readiness. We would like you to spend a few minutes summarizing your definition of readiness for participation in the WTR system.

A. Indicate the primary characteristics of students falling into the three different "Readiness" categories.

WTR READINESS DESCRIPTOR	DESCRIPTION
"NOT READY"	
"READY"	
"ADVANCED"	

Note: If you believe that all students can be classified as ready to enter the WTR lab, omit information requested for the "not ready" student.

B. Please list the primary learning outcomes you expect from student participation in the Writing to Read system. List outcomes for each of the three student groups you identified in terms of readiness at entry to the WTR system.

STUDENTS	EXPECTED STUDENT LEARNING OUTCOMES
"NOT READY"	
"READY"	
"ADVANCED"	

Note: If your expectations are the same for all three groups, list the learning outcomes only once.

5. Attached is a class list of student names, identification numbers, sex, and ethnic codes. Please edit this list by crossing out students no longer in your class and adding names, sex, and ethnicity of new students.

   In the column labeled "Readiness Level," indicate the level of readiness at which you assessed each student <u>at the beginning of his Writing to Read lab experience</u>. Please use your own readiness definitions as a guide.

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WRITING TO READ
ON-SITE OBSERVATION CHECKLIST

School/Teacher: _____ Observer: _____

Total Students: _____ Date: _____

Number of Students per "Readiness Level"		(Names of Randomly-Selected Students; Circle Students Observed)		
Not Ready	____	_____	_____	_____
Ready	____	_____	_____	_____
Advanced	____	_____	_____	_____

WRITING TO READ CENTER CHECKLIST

The Writing to Read Center provides an inviting environment for the students. _____

The Center is well arranged with each learning station clearly defined. _____

All of the equipment is operating well. _____

Materials in the Center are well-organized. _____

An effective management system has been implemented. _____

Each of the learning stations is operating smoothly.
- Computers _____
- Work Journals _____
- Writing Table _____
- Typewriters _____
- Listening _____
- Word Games _____
- Others _____

Supportive language activities, games, etc., are being incorporated into the Center. _____

The roles of those working in the Center have been clearly defined.
- Computer Aide _____
- Classroom teachers _____
- Students _____
- Classroom Aides _____
- Coordinator _____
- Parents _____
- Other _____

Student writing samples being collected _____

WRITING TO READ

STUDENT OBSERVATION/INTERVIEW RECORD

Student Name: _____ School: _____ Teacher: _____

Not Ready ___ Ready ___ Advanced ___ Observer: _____ Date: _____

NARRATIVE REPORT OF SILENT 15-MINUTE OBSERVATION
OF STUDENT AT STATION(S), ACTIVITIES, MOVEMENT...

Student _____

1. What are you doing here at the (Typing, or Composing, etc.) station?

2. Tell me what you do in the Writing to Read Center.

3. What do you like most about the Writing to Read Center?

4. Are you learning to write? Can you show me something you've written?

5. Are you learning to read? Can you show me something you can read?

6. How do you like using the computers?

7. Do you play games here?

8. How do you like using the typewriter? What do you do at the typewriter?

9. What don't you like about Writing to Read?

10. How do you know when/where to move to another station?

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APPENDIX C:

Summary of Principals' Responses

RESPONSES TO PRINCIPALS' TOPIC INTERVIEW

WRITING TO READ

A. How Writing to Read fits in with the other instructional programs

1. WTR enhances the kindergarten and first grade programs because we have an emphasis on writing and language arts in this school. (5)
2. Students start writing at an early age. (2)
3. It's an extension of the reading and language program.
4. There is little or no conflict with the basal text.
5. Students experience the new computer technology.
6. Starting the system in January suits the readiness for kindergarten students better. (2)
7. The phonetic spelling has not caused us problems.
8. It's really a writing program with reading as a spinoff.
9. We used a consultant to help us with inservice training.
10. We need more software, both before and after the Writing to Read cycles.
11. We employed a consultant to add additional writing components to follow up after the Writing to Read system.
12. Small group readiness activities are important before Writing to Read became successful for kindergarteners.
13. Writing to Read fits well in the first grade. (2)
14. Kindergarten classes have shorter time, so it's difficult to get what's needed into the instructional program.
15. Writing to Read provides reading, word analysis, speaking, listening, viewing, writing and spelling opportunities, all of which are suggested in Portland Public Schools language arts continuum.
16. WTR emphasizes our writing program.
17. Our consultant works to continue the flow of ideas past the Writing to Read stage.
18. It helps develop independent study habits.
19. Some teachers don't want Writing to Read because it's not appropriate for them.

20. Teachers need better initial inservice.

21. It makes two separate programs for some teachers.

22. Different teachers operate the system differently.

23. We are making sure it fits into our school.

24. The system is not operated according to IBM directions.

25. It's unclear to teachers whether Writing to Read is supposed to be a reading program or a writing program.

26. We supplement activities for kids who are not ready for the system.

27. It teaches letter names and other ingredients that are found in other kindergarten language arts programs.

28. The system fits in with kindergarten Scope and Sequence in that it includes sounds, blends, etc., the same as other programs.

29. Works as a part of the language arts block.

30. Writing to Read is used in kindergarten, first and second grades with the reading and writing program.

31. Writing to Read fits in with Houghton-Mifflin because it is basically sounds, and Houghton-Mifflin is basically comprehension.

32. Writing to Read has improved the volume of writing this year in kindergarten, and especially in first grade.

33. It develops awareness for communication skills.

34. Our creative writing program is stronger.

B. Influence on school management priorities

1. A coordinator does the scheduling, evaluation, introduction of new materials.

2. WTR required a great deal of coordinator time last year.

3. Teachers and lab assistants used the lab more easily in the second year.

4. WTR is time consuming to manage.

5. A coordinating teacher is very important.

6. Scheduling is complicated.

7. Time is required for recruiting parents to assist in labs as volunteers.

8. It's time consuming to keep up with the hardware maintenance.

9. An aide is essential.

10. More and different kinds of software are needed.

11. Management is not a problem.

12. The January start for kindergarten makes scheduling better.

13. Coordinating lab and classroom activities is a high management priority.

14. Regular and consistent team meetings are required for Writing to Read.

15. Shared decisions should shape the Writing to Read system to fit the needs of students and the school staff.

16. It is awkward to work in a substitute teacher for Writing to Read.

17. It requires a lot of teacher time to manage.

18. We have many Writing to Read workshops, meetings, etc.

19. We needed to devise Writing to Read readiness in order to keep all the class working successfully in the lab.

20. The time it takes to manage Writing to Read is made up for by many activities the system provides.

21. Most exposure in the least time is the efficient feature of the Writing to Read system.

22. Things run smoothly, partly because we cut back to forty-five minutes per session.

23. There are not as many responsibilities for the principal in the second year.

24. Some students remained in the program all year.

25. It's a management priority for us and working well.

26. There is a lot of pressure from other programs such as Math Their Way.

27. It's a definite school priority.

28. Writing to Read has a tremendous influence on school management.

29. It impacts scheduling, book adoptions, inservice and even the budget.

30. One-third of our pupils are in the system.

31. We will inservice third grade teachers for next year.

32. Space is needed and this requires getting an interior room, door locks, revised wall plugs, etc.

33. WTR requires a separate classroom.

34. WTR is a required priority.

35. Managing WTR is about the same as other systems.

36. It's disconcerting taking responsibility for a program someone outside the building arranges the logistics for, and so forth.

37. We have had no direct contact with the IBM company this year.

38. An excellent aide uses a great deal of her own time to make the program work.

39. Program is just another add-on, but no particular problem.

40. There is a positive public relations effect with parents.

41. Scheduling is difficult for forty-five minutes in a one-half day kindergarten program.

42. It requires extra planning efforts.

43. We have had after-school programs for parents.

C. Impact on school budget

1. We pay seven-eighths FTE in order to keep the program performing successfully.

2. We have a part-time coordinator as well as a highly trained aide. (2)

3. We spent over $1,000.00 on materials to enhance the program.

4. We needed to build up our library at that grade level.

5. We added materials for the centers.

6. Demands on the school budget is moderate, but we would buy more software after Cycle 10 if it were available.

7. We purchased cards so the other two computers could use the printer. (2)

8. We really need help in providing FTE.

9. The school budget could not support the FTE necessary for the program.

10. We have used our school budget to support some different ways of doing things in the lab.

11. No real impact because data processing pays for the aide. (3)

12. We buy extra software. (2)

13. It doesn't affect our school budget because the District is paying. (2)

14. We were able to employ an aide out of the District general fund budget. (2)

15. We bought additional instructional materials out of the ECEC fund.

16. No real impact because we use ECEC funds.

17. We need to buy something to work beyond Cycle 10, but it's not available.

18. A lot of the school budget is used, especially for FTE.

19. An aide is needed at least half-time.

20. Some of the equipment has still not been made to work.

21. The program requires FTE and it has cost us FTE from the building budget.

22. Instructional coordinator is paid out of the basic school funds.

D. Impact on teacher morale

1. Impact on teacher morale has been positive. (3)

2. Teachers have adapted to program.

3. Teachers have added their own touch to the system.

4. Teachers see pupils learning and enjoying it.

5. Teachers recognize the values of the system.

6. Teachers' morale would be improved if there were more ways of sharing ideas and techniques and materials among the different buildings. (2)

7. The coordinator works extremely well with teachers and as a result they are happy with the program.

8. It's good for parents' morale.

9. The griping heard last year has stopped this year.

10. It's good for kids' morale.

11. Morale is better in general this year.

12. Negative feelings were a direct result of concerns/feelings expressed at monthly meetings.

13. Parents helped and we have a student teacher, so there are usually three adults in the lab.

14. Our aide is the "heart" of our program.

15. Cutting the time to forty-five minutes and teachers becoming used to it has done away with complaints.

16. Just one teacher may be a little dissatisfied.

17. The impact was negative on our first-grade teachers.

18. It's positive for kindergarten teachers.

19. Teachers new to the program were trained by the people in the school and accepted the Writing to Read program.

20. First-grade teachers were reluctant to add Writing to Read to their regular instructional programs.

21. We used Writing to Read for Chapter I second-grade students during the first half of the year.